

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An inverter control unit for motor driving, said inverter control unit comprising:

a rectifier circuit operable to convert into a DC power a first AC power inputted from an AC power supply, said rectifier circuit including a diode bridge and a reactor connected to an AC input side or a DC output side of said diode bridge and having a small inductance, with said diode bridge having a plurality of first driver elements;

an inverter operable to convert the DC power from said rectifier circuit into a second AC power so as to output the second AC power to a motor, said inverter including a plurality of second driver elements;

a capacitor operable to absorb regenerative energy of the motor, said capacitor being connected between DC buses of said inverter and having a small capacitance; and

an overvoltage protecting circuit connected between said DC buses of said inverter in parallel with said capacitor so as to be actuated prior to a breakdown of said first driver elements of said diode bridge and said second driver elements of said inverter,

wherein, when a charging voltage of said capacitor has reached a preset voltage, a regenerative current of the motor flows through said overvoltage protecting circuit such that the
[[a]] charging voltage of said capacitor, which is raised by the regenerative energy of the motor when the motor is being stopped, is set lower than a breakdown voltage of said capacitor and said inverter by said overvoltage protecting circuit.

2. (Previously Presented) The inverter control unit as claimed in Claim 1, wherein said overvoltage protecting circuit is formed by a surge absorber.

3. (Previously Presented) The inverter control unit as claimed in Claim 1, wherein said overvoltage protecting circuit is formed by a surge absorber and a gas arrester connected to said surge absorber in series.

4. (Currently Amended) An air-conditioner including an inverter control unit for driving a motor, said inverter control unit comprising:

a rectifier circuit operable to convert into a DC power a first AC power inputted from an AC power supply, said rectifier circuit including a diode bridge and a reactor connected to an AC input side or a DC output side of said diode bridge and having a small inductance, with said diode bridge having a plurality of first driver elements;

an inverter operable to convert the DC power from said rectifier circuit into a second AC power so as to output the second AC power to the motor, said inverter including a plurality of second driver elements;

a capacitor operable to absorb regenerative energy of the motor, said capacitor being connected between DC buses of said inverter and having a small capacitance; and

an overvoltage protecting circuit connected between said DC buses of said inverter in parallel with said capacitor so as to be actuated prior to a breakdown of said first driver elements of said diode bridge and said second driver elements of said inverter,

wherein, when a charging voltage of said capacitor has reached a preset voltage, a regenerative current of the motor flows through said overvoltage protecting circuit such that the [[a]] the charging voltage of said capacitor, which is raised by the regenerative energy of the motor when the motor is being stopped, is set lower than a breakdown voltage of said capacitor and said inverter by said overvoltage protecting circuit.

5. (Previously Presented) The air-conditioner as claimed in Claim 4, wherein said overvoltage protecting circuit is formed by a surge absorber.

6. (Previously Presented) The air-conditioner as claimed in Claim 4, wherein said overvoltage protecting circuit is formed by a surge absorber and a gas arrester connected to said surge absorber in series.